

Application No. 09/919,619

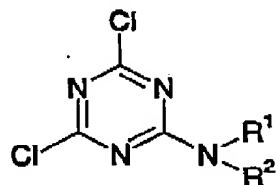
Amendment dated February 18, 2004

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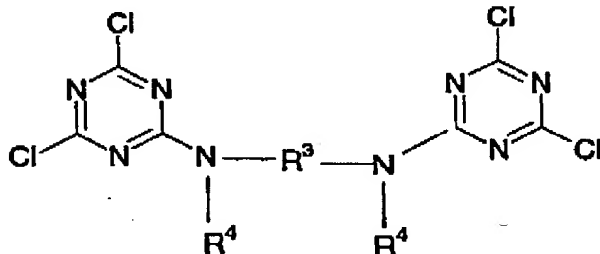
Amendments to the Claims:

The following claims will replace all prior versions of the claims in this application:

1. (Previously presented) A method for the permanent flameproof finishing of cellulose fibers and articles containing cellulose fibers, comprising treating said cellulose fibers or said articles containing cellulose fibers under alkaline conditions, during which a swelling of the fibers occurs, and then treating the swollen fibers so produced with a cyanuric chloride derivative in an aqueous-alkaline phase, wherein a 4,6-dichloro-1,3,5-triazine-2-yl amine of formula I or II is used as said cyanuric chloride derivative:



(I)



(II),

wherein:

R<sup>1</sup> and R<sup>2</sup> are the same or different and are selected from the group consisting of: H; (C<sub>1</sub> – C<sub>6</sub>) alkyl; benzyl; phenyl; ω-amino (C<sub>2</sub> – C<sub>6</sub>) alkyl; ω-hydroxy (C<sub>2</sub> – C<sub>6</sub>) alkyl; -(CH<sub>2</sub>)<sub>m</sub>SO<sub>2</sub>-OH or -(CH<sub>2</sub>)<sub>m</sub>-COOH, in which m is 1 or 2, as well as their amides; -(CH<sub>2</sub>)<sub>n</sub>-P(O)(OR')<sub>2</sub> in which n = 1, 2 or 3 and R' = H, CH<sub>3</sub> or C<sub>2</sub>H<sub>5</sub>; o-, m- or p-C<sub>6</sub>H<sub>4</sub>-SO<sub>2</sub>NH<sub>2</sub>; and o-, m- or p-C<sub>6</sub>H<sub>4</sub>-N(CH<sub>3</sub>)<sub>3</sub><sup>+</sup>; or R<sup>1</sup> and R<sup>2</sup> together form an ethylene-, trimethylene- or bismethylene imino group;

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R<sup>3</sup> in formula II is selected from the group consisting of: para- or meta-phenylene; 1,4-, 1,3- or 2,6-naphthylene; (C<sub>2</sub> - C<sub>6</sub>) alkylene; -C<sub>2</sub>H<sub>4</sub>-NH-C<sub>2</sub>H<sub>4</sub>-; C<sub>2</sub>H<sub>4</sub>-NH-C<sub>2</sub>H<sub>4</sub>-NH-C<sub>2</sub>H<sub>4</sub>-; C<sub>2</sub>H<sub>4</sub>-O-C<sub>2</sub>H<sub>4</sub>-; and C<sub>6</sub>H<sub>4</sub>-NHCONH-C<sub>6</sub>H<sub>4</sub>-; and

R<sup>4</sup> is selected from the group consisting of: H; (C<sub>1</sub>-C<sub>3</sub>) alkyl; aminoethyl; and aminopropyl; or both R<sup>4</sup> groups together form ethylene or propylene; ~~and~~  
~~wherein the compound of formula I or II is used in an amount corresponding to a nitrogen content of at least 2% by weight, relative to the finished cellulose.~~

2. (Original) The method according to claim 1, wherein said 4,6-dichloro-1,3,5-triazine-2-yl amine is selected from the group consisting of: 2-amino-4,6-dichlorotriazine; 2-aminoethylamino-2,4-dichlorotriazine; 2-(p-benzenesulfonamide-amino)-4,6-dichlorotriazine; a salt, especially a halogenide of 2-(p-trimethylammonium-benzene-amino)-4,6-dichlorotriazine; bis-N,N'-(4,6-dichloro-triazine-2-yl)-p-phenylene diamine; bis-N,N'-(4,6-dichlorotriazine-2-yl)-(C<sub>2</sub> to C<sub>4</sub>) alkene diamine; and bis-(4,6-dichlorotriazine-2-yl)-aminoethylphosphonate.

3. (Original) The method according to either claim 1 or 2, characterized in that the cellulose fiber is a cotton or viscose fiber and that it is in the form of a flock, yarn, textile fabric or fleece.

4. (Original) The method according to either claim 1 or claim 2, wherein the 4,6-dichlorotriazinyl amine compound is used in an amount corresponding to 20 to 80% by wt. relative to the cellulose.

5. (Cancelled).

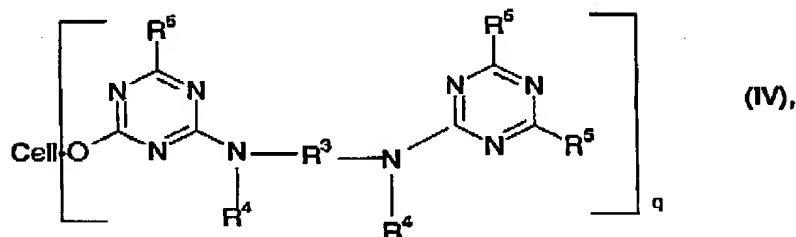
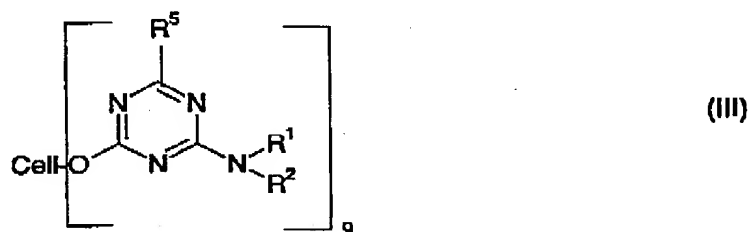
6. (Previously presented) The method of claim 1, wherein said at least one 4,6-dichlorotriazinyl amine compound is used in an amount of 3 to 7% by wt. relative to the finished cellulose.

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7. (Original) The method of either claim 1 or claim 2, wherein before, during or after the flameproof finishing with a dichlorotriazinyl amine compound, said cellulose is additionally finished with a phosphorus-containing compound and wherein the phosphorus content during the additional finishing is at least 1% by.wt. relative to said cellulose.

8. (Original) The method of claim 7, wherein said phosphorus-containing compound is selected from the group consisting of: dialkylphosphonocarboxylic acid amides and their N-methylol compounds; phosphonates; tetrahydroxymethylphosphonium salts; phosphates; hydrogen phosphates; and phosphorus-containing triazinyl amino compounds; and wherein said phosphorous-containing compound binds to the cellulose either alone or in the presence of urea or of a source of formaldehyde.

9. (Currently amended) Cellulose fibers finished in a permanently flameproof manner and articles containing these cellulose fibers, characterized by amino-s-triazine compounds bound to glucose units of the cellulose via ether bridges and by the structure of formula III or IV:



wherein:

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$R^1$  and  $R^2$  are the same or different and are selected from the group consisting of:  $H$ ;  $(C_1 - C_6)$  alkyl; benzyl; phenyl;  $\omega$ -amino  $(C_2 - C_6)$  alkyl;  $\omega$ -hydroxy  $(C_2 - C_6)$  alkyl;  $-(CH_2)_mSO_2OH$  and  $-(CH_2)_mCOOH$ , in which  $m$  is 1 or 2, as well as their amides;  $-(CH_2)_n-P(O)(OR')_2$  with  $n = 1, 2$  or  $3$  and  $R' = H, CH_3$  or  $C_2H_5$ ;  $o$ -,  $m$ - or  $p$ - $C_6H_4-SO_2NH_2$ ; and  $o$ -,  $m$ - or  $p$ - $C_6H_4-N(CH_3)_3^+$ ; or  $R^1$  and  $R^2$  together form an ethylene-, trimethylene- or bismethylene imino group;

$R^3$  in formula IV is selected from the group consisting of: para- or meta-phenylene; 1,4-, 1,3- or 2,6-naphthylene;  $(C_2 - C_6)$  alkylene;  $-C_2H_4-NH-C_2H_4-$ ;  $C_2H_4-NH-C_2H_4-NH-C_2H_4-$ ;  $C_2H_4-O-C_2H_4-$ ; and  $C_6H_4-NHCONH-C_6H_4-$

$R^4$  is selected from the group consisting of:  $H$ ;  $(C_1 - C_3)$  alkyl; aminoethyl; and aminopropyl; or both  $R^4$  groups together form ethylene or propylene;

$R^5$  in formulas III and IV is selected from the group consisting of:  $Cl$ ;  $OH$ ; Ocell in which cell is an anhydroglucose unit of cellulose; and  $OR^6$ , or  $NHR^6$  in which  $R^6$  standing for a dye group;

and wherein  $q$  is the average degree of substitution per glucose unit and is 1 to 3, ~~wherein the finished cellulose fibers have a nitrogen content of at least 1% by weight.~~

10. (Cancelled).

11. (Original) The finished cellulose fibers of claim 9, wherein said cellulose fibers are in an article selected from the group consisting of: yarn; a fleeces; and a sheet.

12. (Cancelled).

13. (Previously presented) The finished cellulose fibers of claim 9, wherein said finished cellulose fibers have a nitrogen content of 2 to 7% by wt.

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14. (Previously presented) The finished cellulose fibers of any one of claims 9 or 13, wherein said cellulose fibers additionally contain a bound phosphorus compound.

15. (Original) The finished cellulose fibers of claim 14, characterized in that said fibers have a nitrogen content in the range of 1 to 7 % by wt. and a phosphorus content in the range of 1 to 7% by wt.

16. (Previously presented) The finished cellulose fibers of any one of claims 9 or 13, characterized in that they have an LOI value of at least 22.

17. (Original) The finished cellulose fibers of claim 16, wherein said LOI value is greater than 25.

18. (New) The method of claim 1, wherein said at least one 4,6-dichlorotriazinyl amine compound is used in an amount of 2% by wt. relative to the finished cellulose.

19. (New) The finished cellulose fibers of claim 9, wherein said finished cellulose fibers have a nitrogen content of at least 1% by wt.

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